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THE NEW  
**EARTH  
SCIENCE  
ACTIVITIES  
LAB**





## ALTERNATE SELECTION

January, 1962

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*From the  
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of mineralogy, geology  
and paleontology—in one,  
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partitioned collection and display sections, THE EARTH SCIENCE ACTIVITIES LAB also includes the 96-page, lucidly written instruction manual, *Earth Science Activities in the Field and Laboratory*. Illustrated with over 200 photographs, drawings, diagrams and charts, here is a comprehensive presentation of the basic scientific principles, techniques and applications of the science of petrology; an engaging introduction to the "language" of earth science—and to fundamental concepts of chemistry and such phenomena as polarization and fluorescence; and a fascinating guide to 88 intriguing laboratory experiments and projects in the field.



# THE COMPONENTS OF THE EARTH SCIENCE ACTIVITIES LAB

18 ACTUAL ROCK SPECIMENS  
12 ACTUAL FOSSIL SPECIMENS  
30 ACTUAL MINERAL SPECIMENS

(See over for complete listing)

CONTACT GONIOMETER

ALCOHOL LAMP

ULTRA-VIOLET LAMP

STREAK PLATE

POLARIZED FILMS

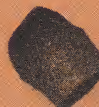
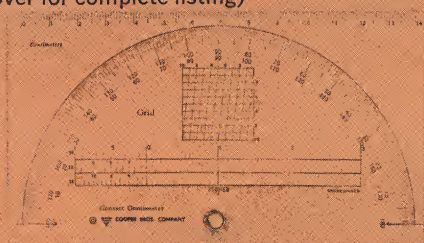
CHARCOAL BLOCK

WEIGHING SCALE

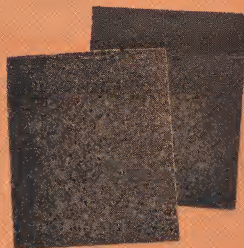
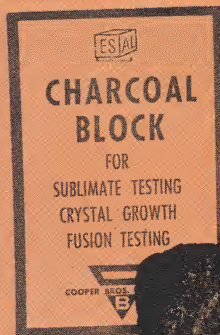
METAL TRAY

ABRASIVES

MAGNIFYING LENS



PLUS TWO INSTRUCTION MANUALS



MAGNET  
BLOWPIPE  
TWEEZERS  
CORK

NICHROME WIRE

PARADICHLOROBENZENE NUGGETS

COBALT CHLORIDE

SODIUM BORATE

SODIUM CARBONATE

ACETIC ACID

## A PARTIAL LISTING OF THE 88 EXPERIMENTS AND PROJECTS

- Exp. 3. Measuring the Angles of a Crystal
- Exp. 4. Forming Crystals from Molten Material
- Exp. 8. Growing Crystals
- Exp. 11. Turning Limonite to Hematite
- Exp. 16. Using the Streak Test in Mineral Identification
- Exp. 22. Determining the Specific Gravity of a Rock Less Than 1
- Exp. 23. Distinguishing the Type of Luster and Tenacity of a Mineral
- Exp. 24. Classifying for Structure
- Exp. 26. Cleaving Mica
- Exp. 27. Which Minerals Exhibit Cubic Cleavage? Rhombohedral Cleavage? Conchoidal Fracture?
- Exp. 32. Measuring Effects of Polarized Light
- Exp. 35. Your Own Fluorescent Mineral Collection
- Exp. 38. Can Uranium Minerals Produce Light?
- Exp. 39. Magnetism with Minerals
- Exp. 40. Separating Magnetite from Its Impurities
- Exp. 41. Determining the Fusibility of Minerals
- Exp. 42. The Effect of a Flux on Blowpipe Tests
- Exp. 43. Using the Flame Test in Mineral Identification
- Exp. 44. Identifying Minerals with the Borax Bead Test
- Exp. 45. Effects of a Reducing Flame on the Color of a Borax Bead

- Exp. 46. How Are Carbonate Minerals Determined by Chemical Reaction
- Exp. 47. Testing for Iron and Copper
- Exp. 49. Testing for Aluminum in Kyanite
- Exp. 51. Determining the Size of Crystals in a Rock
- Exp. 53. In What Ways Do Metamorphic Rocks Differ?
- Exp. 58. Separating Metals from Their Ores
- Exp. 60. Making Plaster, Adobe Bricks and Glass
- Exp. 61. Making Emery Paper and Talcum Powder
- Exp. 70. Distinguishing Between Marine and Land Fossils
- Exp. 71. Determining the Ancient Climates Where the Fossil Was Found
- Exp. 72. Discovering Which Animals Lived Together in Ancient Times
- Exp. 74. Etching a Fossil from Rock
- Exp. 75. Identifying the Method of Preservation of Your Fossils
- Exp. 76. Making a Fossil Cast
- Exp. 77. Which Minerals Are Found in Fossils?
- Exp. 78. Identifying Incomplete Fossils
- Exp. 79. Examining Internal Structure of a Fossil
- Exp. 80. Polishing Horn Coral and Petrified Wood
- Exp. 82. Making a Temporary Thin Section
- Exp. 84. A Technique for Identifying Gastropods
- Exp. 78. Examining Fossiliferous Limestone for Sea Life
- Exp. 88. Removing Microfossils from Limestone

PLEASE SEE REVERSE SIDE FOR COMPLETE LISTING OF  
CONTENTS OF MANUAL AND ALL LAB SPECIMENS



Partial Contents of the 96-page Instruction Manual

## EARTH SCIENCE ACTIVITIES IN THE FIELD AND LABORATORY

### Part One. MINERALS

Physical Properties; Hardness of a Mineral; Streak; Specific Gravity; Structure; Tenacity; Cleavage; Fracture; Luminescence; Polarization; Fluorescent Mineral Collecting and Prospecting; Fluorescence in Nature; Working With the Blowpipe.

### Part Two. ROCKS

Weathering of Rocks; Sedimentary, Metamorphic and Igneous Rocks; Rocks and Minerals in Industry

### Part Three. FOSSILS

A Research Tool of the Paleontologist; The Theory of Evolution; Geologic History; Where to Find Fossils; How Fossils Are Preserved; Classification; Exact Identification; The Economic Importance of Fossils

### Part Four. HOW TO BUILD AND ORGANIZE YOUR COLLECTIONS

Storing and Displaying Your Collection; Classifying and Displaying Your Fossil Collection

### APPENDIX

Table I: Specific Gravity of Minerals

Table II: Color Streak and Hardness of Minerals

Table III: Fluorescent Minerals and Their Location in America

Table IV: Common Elements—Their Symbols and International Atomic Weights

## THE SPECIMENS INCLUDED IN THE EARTH SCIENCE ACTIVITIES LAB

### 30 MINERAL SPECIMENS

Apatite	Hematite
Autunite	Kyanite
Calcite	Limonite
Celestite	Magnetite
Chalcedony	Malachite
Chrysocolla	Mica
Chrysotile	Pyrite
Clay	Quartz Crystal
Corundum	Milky Quartz
Feldspar	Smoky Quartz
Fluorite	Scapolite
Galena	Sulphur
Garnet	Talc
Gypsum	Topaz
Halite	One Unidentified Specimen for study purposes

### 18 ROCK SPECIMENS

Anthracite	Obsidian
Basalt	Pegmatite
Basalt (weathered)	Polished Pebble
Beach Pebble	Pumice
Conglomerate	Quartzite
Gneiss	Sand
Granite	Sandstone
Limestone	Schist
Marble	Shale

### 12 FOSSIL SPECIMENS

Brachiopod	Horn Coral
Concretion	Leaf Print
Crinoid Stem	Lignite
Dinosaur Bone	Peat
Fossiliferous Limestone	Petrified Wood
Gastropod	Sea Urchin

OF SPECIAL INTEREST TO  
PARENTS AND TEACHERS  
HANDBOOK FOR THE EARTH SCIENCE  
SERIES—a 24-page booklet included with  
THE EARTH SCIENCE ACTIVITIES LAB—  
presents supplementary material on min-  
erals, rocks, and fossils; a special section  
on soil—its minerals, formation and classi-  
fication; and detailed diagrams of crystal  
structure, types of cleavage, the rock cycle  
and the geologic time scale.

